

Application No.: 10/622,511

Amendments to the Drawings:

FIG. 5 has been amended to include the reference sign S7. The amended drawing, labeled Replacement Sheet, is attached to this response.

REMARKS

This amendment is filed in response to the Office Action dated March 1, 2006. In view of these amendment and remarks, this application should be allowed and the case passed to issue. No new matter is introduced by this amendment. The amendment to claim 1 is supported by the specification at page 13, lines 25 and 26. Claim 2 is amended to correct an informality. Support for the amendment to claim 3 is found in the specification at page 17, lines 30-32 and page 18, lines 13-20 (particularly "wider" in line 19). The specification at page 24, lines 23-30 provide support for the amendment to claim 14. The amendment to claim 16 is supported by the specification at page 28, lines 22-25, and Fig. 6.

Claims 1-18 are pending in this application. Claims 1-17 are rejected. Claim 18 is withdrawn pursuant to a restriction requirement. Claims 1-3, 14, and 16 have been amended in this response.

Restriction

The Examiner maintained that the restriction requirement was proper because the method allegedly does not require that its product comprise a positive electrode terminal lead to be sandwiched between welded portions. The Examiner's reasoning is clearly erroneous, as method claim 18 requires "**welding the cell outer sheath** to gas-tightly encapsulate the electric power generating element inside the cell outer sheath such that a **positive electrode terminal lead electrically conductive with the positive electrode is sandwiched between the cell outer sheath** to extend to an outside of the cell outer sheath" (emphasis added). The Examiner's rationale directly contradicts the express requirements of claim 18. Furthermore, the Examiner has not satisfied the burden of establishing a proper restriction requirement, as the Examiner has not identified a different product that could be made according to the claimed method.

Drawing Objections

The drawings were objected to as failing to comply with 37 C.F.R. § 1.84(p)(5) because the reference sign S7 was not included in the drawings. This objection is traversed, and reconsideration and withdrawal thereof respectfully requested.

FIG. 5 has been amended to include the reference sign S7. The amended drawing, labeled Replacement Sheet, is attached to this response.

Objections to the Specification

The specification is objected to because "In Figs. 4A and 5B" in page 11, should be "In Figs. 4A and 4B." This objection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The specification has been amended in accordance with the Examiner's recommendation.

Claim Rejections Under 35 U.S.C. § 112

Claim 3 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner asserted that it is unclear which surface area is being divided by cell capacity. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

Claim 3 has been amended to clarify which surface area is being divided by cell capacity.

Claims 14 and 16 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner asserted that the limitation "at least more than" is unclear. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

Claims 14 and 16 have been amended to correct the asserted informality. Corresponding amendments have also been made in the specification to correct the asserted informalities.

Applicants submit that the claims fully comport with the requirements of 35 U.S.C. § 112.

Claim Rejections Under 35 U.S.C. §§ 102 and 103

Claims 1-12 and 14-27 are rejected under 35 U.S.C. § 102(a) as being anticipated by, or in the alternative as obvious in view of 103(a) as unpatentable over Shibuya et al. (U.S. Pat. No. 6,291,098) in view of Murai et al. (U.S. Pat. No. 6,444,355). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The following is a comparison between the invention, as claimed, and the cited prior art.

An aspect of the invention, per claim 1, is an automobile cell comprising an electric power generating element, a positive electrode having a positive electrode active substance layer, a negative electrode having a negative electrode active substance layer, and a separator interposed between the positive electrode and the negative electrode. The positive electrode, the negative electrode and the separator are stacked in a stack direction to allow the positive electrode and the negative electrode, opposing to the positive electrode via the separator, to define a unit electrode. A cell outer sheath made from a laminate film compositely composed of polymer and metal is welded to gas-tightly encapsulate the electric power generating element inside the cell outer sheath such that an automobile cell is formed in a flat shape with a thickness defined by the cell outer sheath along the stack direction. A positive electrode terminal lead electrically conductive with the positive electrode is sandwiched between welded portions formed by the cell outer sheath that has been welded and extends to an outside of the cell outer sheath. A negative electrode terminal lead electrically conductive with the negative electrode is sandwiched between welded portions formed by the cell outer sheath that has been welded and extends to the outside of the cell outer sheath. A relationship between the thickness of the automobile cell and a sum of a thickness of the positive electrode active substance layer and a thickness of the negative electrode active substance layer, along the stack direction of the unit

electrodes, is defined such that a value obtained by dividing the thickness of the automobile cell by the sum of the thickness of the positive electrode active substance layer and the thickness of the negative electrode active substance layer is equal to or greater than 10 and equal to or less than 80.

The Examiner asserted that Shibuya et al. disclose a thin type cell comprising positive and negative electrodes and electrode thicknesses. The Examiner indicated that Shibuya et al. do not disclose the thickness of the positive electrode current collector, electrolyte, and separator. The Examiner alleged that dividing the thickness of the cell by the thicknesses of the positive and negative electrode active material layers yields a value no greater than ~2.

Initially it is noted that the anticipation portion of this rejection is clearly erroneous. The Examiner admitted that it would have been **obvious** to use the aluminum net of Murai et al. Relying on a secondary reference to show obviousness precludes a determination that the claims are anticipated by the primary reference. Though it is not clear, it appears as if the Examiner may be asserting that the thickness of the aluminum net is inherently 30 μm . However, the Examiner has not shown that **all aluminum net has a thickness of 30 μm** .

The Examiner's decision not to give patentable weight to the limitations "automobile cell" in claim 1 and "mounted on a vehicle" in claim 17 is traversed. During examination, claims must be considered as a whole. The Examiner is not free to ignore claim limitations.

Shibuya et al. and Murai et al., whether taken alone, or in combination, do not anticipate or render obvious the claimed automobile cell. Shibuya et al. and Murai et al. do not suggest an automobile cell comprising positive and negative electrodes wherein a relationship between the thickness of the automobile cell and a sum of a thickness of the positive electrode active substance layer and a thickness of the negative electrode active substance layer, along the stack

direction of the unit electrodes, is defined such that a value obtained by dividing the thickness of the automobile cell by the sum of the thickness of the positive electrode active substance layer and the thickness of the negative electrode active substance layer is equal to or greater than 10 and equal to or less than 80, as required by claim 1.

The Examiner alleged that dividing the thickness of the cell by the thicknesses of the positive and negative electrode active substance layers yields a value no greater than ~2. It is not clear how the Examiner obtained this value, but 2 is clearly outside the claimed range of greater than 10 and equal to or less than 80.

As shown in the Table below, using the component thicknesses from Shibuya et al., as described in the portions of the specification cited by the Examiner, and illustrated in Fig. 3, the ratio of the total cell thickness to the sum of the thicknesses of the positive electrode active substance layer and the thickness of the negative electrode active substance layer is 3.64. 3.64 is greater than the less than ~2 reported by the Examiner, and less than the required minimum ratio of 10. Even though the Shibuya et al. separator thickness is not known, it is clear it would not increase the overall thickness of the cell so dramatically that the ratio of cell thickness to the sum of the electrode active substance layers would be 10 or greater.

Reference No.	Component	Thickness (μm)
4	Multi-layered film	89
6	Anode terminal	110
2	Anode current collector (nickel foil) Anode active substance	100 100
3	Separator	?
1	Cathode current collector (aluminum net) Cathode active substance	30 100
5	Cathode terminal	110
4	Multi-layered film	89
	Total Cell (except separator)	728
	Sum of electrode active substances	200
	Ratio of Total Cell/Sum of electrode active substances	3.64

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the disclosure in a single reference of each element of a claimed invention. *Helifix Ltd. v. Blok-Lok Ltd.*, 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994); *Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 399, 36 USPQ2d 1101 (Fed. Cir. 1995); *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). Because Shibuya et al. and Murai et al. do not disclose an automobile cell comprising positive and negative electrodes wherein a relationship between the thickness of the

automobile cell and a sum of a thickness of the positive electrode active substance layer and a thickness of the negative electrode active substance layer, along the stack direction of the unit electrodes, is defined such that a value obtained by dividing the thickness of the automobile cell by the sum of the thickness of the positive electrode active substance layer and the thickness of the negative electrode active substance layer is equal to or greater than 10 and equal to or less than 80, as required by claim 1, Shibuya et al. and Murai et al. do not anticipate claim 1.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). There is no suggestion in Shibuya et al. and Murai et al. to modify the thickness of the automobile cell and a sum of a thickness of the positive electrode active substance layer and a thickness of the negative electrode active substance layer, along the stack direction of the unit electrodes, such that a value obtained by dividing the thickness of the automobile cell by the sum of the thickness of the positive electrode active substance layer and the thickness of the negative electrode active substance layer is equal to or greater than 10 and equal to or less than 80, as required by claim 1. Therefore claim 1 is not obvious in view of Shibuya et al. and Murai et al.

The only teaching of the claimed automobile cell comprising positive and negative electrodes wherein a relationship between the thickness of the automobile cell and a sum of a thickness of the positive electrode active substance layer and a thickness of the negative electrode active substance layer, along the stack direction of the unit electrodes, is defined such

that a value obtained by dividing the thickness of the automobile cell by the sum of the thickness of the positive electrode active substance layer and the thickness of the negative electrode active substance layer is equal to or greater than 10 and equal to or less than 80 is found in Applicants' disclosure. However, the teaching or suggestion to make a claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 13 was rejected under 35 U.S.C. § 103(a) as unpatentable over Shibuya et al. in view of Takami et al. (U.S. Pat. No. 6,544,682). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

Shibuya et al. and Takami et al., whether taken alone, or in combination, do not suggest the claimed automobile cell. Takami et al. do not cure the deficiencies of Shibuya et al. Takami et al. do not suggest the relationship between the thickness of the automobile cell and a sum of a thickness of the positive electrode active substance layer and a thickness of the negative electrode active substance layer, along the stack direction of the unit electrodes is defined such that a value obtained by dividing the thickness of the automobile cell by the sum of the thickness of the positive electrode active substance layer and the thickness of the negative electrode active substance layer is equal to or greater than 10 and equal to or less than 80, as required by claim 1.

The dependent claims are allowable for at least the same reasons as the independent claims from which they depend and further distinguish the claimed automobile cell. For example claim 4 further requires that the positive electrode active substance layer is formed on a positive electrode current collector and the negative electrode active substance layer is formed on a negative electrode current collector such that a value obtained by dividing a thickness of the positive electrode terminal lead along the stack direction by a sum of a total thickness of the

positive electrode current collector in the automobile cell is equal to or greater than 0.4 and equal to or less than 2.0. Claim 5 further requires a value obtained by dividing a thickness of the negative electrode terminal lead along the stack direction by a sum of a total thickness of the negative electrode current collector in the automobile cell is equal to or greater than 0.4 and equal to or less than 2.0. Claim 6 further requires a width of the positive electrode terminal lead is equal to or greater than 40 (%) and equal to or less than 80 (%) of a length of one side of the cell outer sheath from which the positive electrode terminal lead extends to the outside. Claim 7 further requires a width of the negative electrode terminal lead is equal to or greater than 40 (%) and equal to or less than 80 (%) of a length of one side of the cell outer sheath from which the negative electrode terminal lead extends to the outside. The cited prior art do not suggest the claimed automobile cell with these additional limitations.

The Examiner, however, citing MPEP § 2144.05, argued that claims 4-6 were not patentably distinct because "[g]enerally, differences in ranges will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a range is critical." The present specification, however, discloses the improvements over the prior art and benefits provided by the claimed automobile cells.

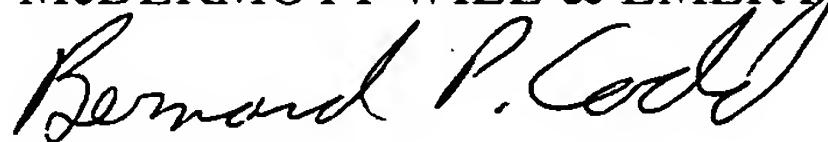
In view of the above amendments and remarks, Applicants submit that this case should be allowed and passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

Application No.: 10/622,511

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP



Bernard P. Codd

Registration No. 46,429

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 BPC:MWE
Facsimile: 202.756.8087
Date: June 30, 2006

**Please recognize our Customer No. 20277
as our correspondence address.**